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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/590,049	06/08/2000	Kenneth J. Southwick	106747-118 DV US CN1	1291

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EXAMINER

RIDLEY, BASIA ANNA

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/590,049

Applicant(s)

SOUTHWICK, KENNETH J.

Examiner

Basia Ridley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33-70 is/are pending in the application.
- 4a) Of the above claim(s) 43,44,48-52,62 and 63 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 69 and 70 is/are allowed.
- 6) ☒ Claim(s) 33-38,41,42,45-47,53-57,60,61 and 64-68 is/are rejected.
- 7) ☒ Claim(s) 39,40,58 and 59 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 100903.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species I-1 and Species A and Species 2 and Species a and Species i, claims 33-42, 45-47, 50, 53-61 and 64-70 in Paper filed on 25 September 2003 is acknowledged. Claims 43, 44, 48, 49, 51, 53, 62 and 63 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.
2. Claim(s) 50 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Species, there being no allowable generic claim.

Claim(s) 50 recite(s) a method wherein at least a portion of a fluid contains an agent and wherein rotating drum causes the agent to further mix with the fluid, while the elected Species i is drawn to a method for fluid heating.

Information Disclosure Statement

3. The following documents, USP 3,667,234 and USP 4,702,846, cited in the information disclosure statement filed in on 9 October 2003 have been already considered as part of the references cited by the examiner in Paper 3.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 33-35, 38, 41, 42, 45-47, 57, 60, 61 and 64 rejected under 35 U.S.C. 102(b) as being anticipated by Schroter et al. (USP 4,913,556).

Regarding claims 33-35 Schroter et al. discloses a method comprising moving a fluid in a first rotational flow pattern, providing a collider chamber and allowing some of the fluid flowing in the first rotational pattern to flow into the collider chamber and form a second rotational pattern, wherein a radius of the first rotational pattern is larger than a radius of the second rotational flow pattern (abstract, Fig. 1, C2/L49-59).

While the reference does not explicitly disclose the difference in radii of the first and second flow patterns causing a rotational velocity of the second flow pattern to be larger than the first flow pattern, the second flow pattern rotating sufficiently fast to generate heat and vaporize at least some of the fluid in the secondary rotational flow pattern and formation of a generally cyclone shaped vapor region near the center of the secondary flow pattern, the fluid motion resulting from rotor motion, where molecules repeatedly collide and generate heat with vaporization, is inherent in the method of Schroter et al.

Regarding claims 38, 41, 42, 45-47, 57, 60, 61 and 64 Schroter et al. discloses a method comprising providing a body having an interior surface and defining a plurality of collider chambers, providing a drum or a rotor within the body, the drum or rotor having an exterior surface, introducing a fluid between the exterior surface of the drum or rotor and the interior surface of the body and rotating the drum or rotor thereby generating a rotational flow pattern in each of the collider chambers (abstract, Fig. 1, C2/L49-59).

While the reference does not explicitly disclose all of the rotational fluid flow patterns rotating in a direction opposite to the rotation of the drum, or the rotation of drum generating

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heat and vaporize at least some of the fluid flowing in the rotational flow patterns, or generating vacuum or compressing some of the fluid, the fluid motion resulting from rotor motion, where molecules repeatedly collide and generate heat with vaporization, is inherent in the method of Schroter et al.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schroter et al. (USP 4,913,556), as applied to claim 33 above, in view of Ryyanen (USP 4,702,846).

Regarding claim 36-37, Schroter et al. discloses all of the claim limitations as set forth above, but the reference does not explicitly disclose a fluid inlet and outlet coupled to the collider chamber for fluid flow into and out of the collider chamber in direction that is non-parallel to an axis of rotation of the secondary rotational flow pattern.

Ryyanen discloses a fluid inlet (12) and outlet (70) coupled to the collider chamber for fluid flow into and out of the collider chamber in direction that is non-parallel to an axis of rotation of the secondary rotational flow pattern, for the purpose to permit fluid enter and leave the apparatus.

It would have been obvious to one having ordinary skill in the art at the time of the invention to add the inlet and outlet, as taught by Ryyanen, to the apparatus used in the method of Schroter et al., for the purpose of permitting fluid to enter and leave said apparatus.

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8. Claim 53-56 and 65-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schroter et al. (USP 4,913,556), as applied to claim 38 and 57 above, in view of Smith, Jr. et al. (USP 5,571,975).

Regarding claim 53-56 and 65-68, Schroter et al. discloses all of the claim limitations as set forth above, but the reference does not explicitly disclose the drum including a first portion and a second portion, an outer diameter of the first portion being smaller than an outer diameter of the second portion.

Smith, Jr. et al. discloses a rotor wherein the drum including a first portion and a second portion, an outer diameter of the first portion being smaller than an outer diameter of the second portion (Fig. 10, C5/L27-29), for the purpose of improving the operation of the drum by forming a self-separating vapor core being produced, which can be easily separated from the liquid being vaporized (C2/L13-56).

It would have been obvious to one having ordinary skill in the art at the time of the invention to shape the drum used in the method of Schroter et al. to have a first portion and a second portion, an outer diameter of the first portion being smaller than an outer diameter of the second portion, as taught by Smith, Jr. et al., for the purpose of improving the operation of the drum by forming a self-separating vapor core being produced, which can be easily separated from the liquid being vaporized.

Allowable Subject Matter

9. Claims 39, 40, 58 and 59 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

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The following is a statement of reasons for the indication of allowable subject matter: the claim combination wherein a method comprises: providing a drum and a plurality of collider chambers, and providing a plurality of fluid inlets, each of the fluid inlets being coupled to a corresponding one of the collider chambers, the fluid inlets being oriented in direction non-parallel to an axis of rotation of the drum; or providing a drum and a plurality of collider chambers, and providing a plurality of fluid outlets, each of the fluid outlets being coupled to a corresponding one of the collider chambers, the fluid outlets being oriented in direction non-parallel to an axis of rotation of the drum, is allowable over the prior art of record.

10. Claims 69 and 70 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the claim combination wherein a method comprises: providing a rotor and a plurality of collider chambers, and providing a plurality of fluid outlets, each of the fluid outlets being coupled to a corresponding one of the collider chambers, is allowable over the prior art of record.

Response to Arguments

11. Applicant's arguments filed on 19 May 2003 (in Paper 5) have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Basia Ridley, whose telephone number is (571) 272-1453. The examiner can normally be reached on Monday through Thursday, from 9:00 AM to 7:30 PM.

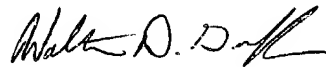
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (571) 272-1444.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.


Basia Ridley
Examiner
Art Unit 1764

BR
January 23, 2004


Walter D. Griffin
Primary Examiner